

REMARKS

Applicants respectfully request reconsideration and allowance of claims 1-5, 7-13, 15-21, 23-29, and 31-32 that are pending in the above-identified patent application. Applicants have amended claims 1, 9, 17, and 25 and cancelled claims 6, 14, 22, and 30. **The amendments to the claims include incorporating the limitations of dependent claims into the respective independent claims. Thus, Applicants submit that the instant amendment does not necessitate further search or raise new issues.** No new matter has been added by way of these claim amendments.

Applicants acknowledge with appreciation that in numbered part 3 of the Office Action, the Examiner deemed claims 7, 15, 23, and 31 as containing patentable subject matter.

In numbered part 2 of the Office Action, the Examiner rejected claims 1-4, 8-12, 16-20, 24-28, and 32 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,314,146 (“the Tellado reference”). Applicants maintain that the Examiner's § 102(b) rejection of (original) claims 1, 9, 17, and 25 should have been withdrawn and incorporates herein the arguments previously made in the December 3, 2004 Response. Nevertheless, to move prosecution forward, Applicants have amended independent claims 1, 9, 17, and 25 to include the limitations of claims 6, 14, 22, and 30, respectively. Therefore, Applicants submit that the § 102(b) rejection has been overcome.

In numbered part 3 of the Office Action, the Examiner rejected claims 5-6, 13-14, 21-22 and 29-30 under 35 U.S.C. § 103(a) as being unpatentable over the Tellado reference. As the limitations of claims 6, 14, 22, and 30 are now found in independent claims 1, 9, 17 and 25, respectively, the Examiner's § 103(a) rejection will be addressed with reference to the independent claims as amended.

Independent method claim 1 and independent apparatus claims 9, 17 and 25 now include steps and/or apparatus for:

- (b) recovering data symbols from the transformed OFDM signal, which include clipping noise;

- (c) subjecting the data symbols to substantially the same clipping function to which the OFDM signal had been subject to prior to transmission;

- (d) attenuating the data symbols;
- (e) subtracting the attenuated data symbols from the clipped data symbols to estimate the clipping noise in the frequency domain based on the data symbols; and
- (f) subtracting the estimated clipping noise from the transformed OFDM signal.

The Examiner rejected (original) independent claims 1, 9, 17, and 25 as anticipated by the Tellado reference and cites Figs. 24 and 29 and column 27, line 40 through column 28, line 57 of that reference as supporting his position. In particular, the Examiner states that the Tellado reference discloses "a block diagram of a receiver for decoding the transmitted OFDM clipped signal (recovering data symbols for the transformed OFDM signal, which including clipping noise)... The first estimate of the distortion is extracted (clipping noise) and combined (subtracting algorithm performed) with the received signal (subtracting the estimated clipping noise from the transformed OFDM signal)."

As to the limitations of original claims 6, 14, 22, and 30, now found in the respective independent claims, the Examiner takes the position that FIG. 29 of the Tellado reference discloses "subjecting the data symbols to substantially the same clipping function to which the OFDM signal had been subject to prior to transmission" as claimed. The Examiner goes on to say that "FFT 860 produces $C^{\wedge}(X(q), A)$ (attenuating the data symbols). $C^{\wedge}(X(q), A)$ is then fed into the input of the decoder 846 (subtracting the attenuated data symbols from the clipped data symbols to obtain the estimated clipping noise)." The examiner's reasoning does not withstand close scrutiny.

As an initial matter, $C^{\wedge}(X(q), A)$ are not attenuated data symbols as the Examiner asserts. Rather, $C^{\wedge}(X(q), A)$ are frequency domain estimations of the clipped portions of the data symbols. (Col. 34, lines 5-11.) Thus, assuming for the purposes of discussion that the "adder" of FIG. 29 is a "subtractor" (which Applicants do not concede), there is no disclosure of "subtracting the attenuated data symbols from the clipped data symbols to estimate the clipping noise in the frequency domain based on the data symbols" as claimed. Indeed, there cannot be such disclosure as $C^{\wedge}(X(q), A)$ are not attenuated data symbols. Further, as the Tellado reference does not disclose "estimate[ing] the clipping noise" as claimed, it does not disclose "subtracting the estimated clipping noise from the transformed OFDM signal" as claimed. Just to test this point, assume only for the purposed of discussion that the Examiner's assertion is correct, i.e., that the "adder" of FIG. 29 is a "subtractor" to estimate the clipping noise: where is the disclosure of the further step of "subtracting the

estimated clipping noise from the transformed OFDM signal" as claimed? There is no such disclosure.

As to dependent claims 5, 13, 21, and 29, the Examiner cites FIG. 13 of the Tellado reference as disclosing "an FFT 302, a demodulator 304 (demapping the transformed OFDM signal), and a decoder 306 (de-coding the received signal)." The Examiner admits that the Tellado reference fails to disclose the claimed steps/apparatus for "de-interleaving the de-mapped signal, decoding the de-interleaved signal, interleaving the decoded signal, and mapping the interleaved signal to obtain the data symbols." However, the Examiner takes the position that such elements are obvious because they "are well known in the art to reduce the transmitted error rates."

It appears that the motivation to employ the claimed steps/apparatus for "de-interleaving the de-mapped signal, decoding the de-interleaved signal, interleaving the decoded signal, and mapping the interleaved signal to obtain the data symbols" is not found in the Tellado reference. Indeed, the Examiner appears to be relying upon personal knowledge in asserting that such elements "are well known in the art to reduce the transmitted error rates." Accordingly, Applicants respectfully request that the Examiner provide an affidavit or declaration setting forth specific factual statements and an explanation to support the finding in accordance with M.P.E.P. § 2144.04(C).

On the other hand, the Examiner may be relying on Applicants' own disclosure in providing the motivation to employ the claimed steps and/or apparatus for "de-interleaving the de-mapped signal, decoding the de-interleaved signal, interleaving the decoded signal, and mapping the interleaved signal to obtain the data symbols." This is not permitted under the Patent Laws. Indeed, reliance on Applicants' disclosure to provide a basis of motivation to modify the Tellado reference is the very definition of improper hindsight reconstruction. See M.P.E.P. § 2145 (X)(A).

In view of the foregoing, Applicants submit that the Tellado reference fails to disclose or suggest each and every feature of independent claims 1, 9, 17 and 25 of the instant application, or their respective dependent claims. Accordingly, Applicants respectfully request that the Examiner withdraw his § 103(a) rejection of the subject claims.

Applicants respectfully submit that the instant claims are in condition for allowance. Early and favorable action is earnestly solicited.

In the event there are any further fees due and owing in connection with this matter, please charge same to our Deposit Account No. 11-0223.

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Respectfully submitted,

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